

2004 STATEWIDE MUNICIPAL SOLID WASTE MANAGEMENT UPDATE

Environmental and Public Protection Cabinet Division of Waste Management

Executive Summary

BACKGROUND

Kentucky has made great strides in the proper management of its solid waste since the late '60's when the first solid waste legislation was passed. Some milestones:

- *1966 - Counties began formal solid waste planning* -- Kentucky Revised Statute (KRS) Chapter 109 gave counties the ability to establish "109 boards" to address solid waste issues.
- *1982 - State laws were expanded* -- To provide funding to counties and penalties for noncompliance.
- *1991 through 2003 - Counties developed five-year plans and submitted annual reports* -- Subsequent legislation furthered the development of county responsibility and state oversight. Counties develop five-year solid waste plans providing for cleanup of illegal open dumps and litter, recycling, access for all households to garbage collection and solid waste education programs. The counties submit annual progress reports to the Environmental and Public Protection Agency providing the basis for cabinet recommendations to the Governor and the General Assembly.
- *1996 - Cabinet initiated illegal open dump abatement program* -- The goal is to eliminate and prevent illegal open dumps across the Commonwealth.
- *1998 - Kentucky Recycling and Marketing Assistance (KRMA)* -- The KRMA program and advisory board were established to develop recycling infrastructures for local governments.
- *1998 and 2001 - PRIDE Programs established* -- Federal funds for local illegal open dump cleanup and solid waste education began to flow into eastern and central Kentucky counties through the establishment of the Eastern Kentucky and Bluegrass PRIDE (Personal Responsibility in a Desirable Environment) programs.
- *2001 - Kentucky Certified Clean County Program is created* -- The creation of the Kentucky Certified Clean County Program (KCCCP) in 2001 provided \$4 million for cleanups of illegal open dumps for counties with mandatory garbage collection.
- *2002 - House Bill 174 provides ongoing funding* -- The 2002 Kentucky legislature established a statewide, ongoing funding mechanism for the cleanup of illegal open dumps, litter and abandoned landfills. An environmental remediation fee of \$1.75/ton on waste disposed and an annual road fund allotment of \$5 million generate approximately \$15 million annually for these cleanup programs.

ACHIEVEMENTS

- *Illegal open dumping declines* - *Illegal open dumping* has declined over 85% in the last eleven years. Over 22,000 illegal open dumps have been cleaned since 1993.
- *Litter abatement activities increase* - The KY Pride fund, Eastern KY PRIDE, Bluegrass PRIDE, Department of Transportation, Adopt-A-Highway and cities and counties contributed to the cleanup of 13,942,720 pounds of litter during 2004. The average cost per pound of litter picked up is \$0.67.
- *Recycling* -- Kentuckians recycled 22% of common household recyclables (aluminum, cardboard, steel, plastic, newspaper, glass and paper), the same rate as in 2003. However, Kentuckians recycled 32.5% of all municipal solid waste in 2004, which included sludge, concrete, compost, and asphalt in addition to the common household recyclables. We are recycling more but we are also creating more waste as shown by the increase of 222,381 tons of Kentucky waste disposed in landfills in 2004.

- *Curbside collection increases* - Participation in **curbside** garbage collection has increased by 23.1% since 1993. The 2004 statewide household participation rate for all collection types is at an all time high of **88.67%**.
- *Waste Tire Amnesty Program* - Nearly 1.4 million waste tires were recovered in 2004 and recycled at a cost of \$1,515,412.00 or \$1.08 per passenger tire equivalent (PTE). The recycled tires are used for tire-derived fuel and crumb rubber for athletic fields and schools and community parks.
- *Kentucky's crowning achievement in cleanup* - Keep America Beautiful recognized Kentucky in 2004 as the No. 1 state for waste tire cleanup and recycling during the Great American Cleanup. Kentucky contributed 864,000 of the 1.2 million waste tires cleaned up and recycled nationwide during the March through May campaign.
- *Crumb Rubber Grant* - The Waste Tire Trust Fund awarded twenty-one grants totaling \$979,000 to assist schools and communities in projects using crumb rubber from waste tires for athletic fields, gyms, parks and community playgrounds.
- *Cabinet Secretary Wilcher makes recycling a priority for the state:*
 - Recycling staff collaborated with the Kentucky Transportation Cabinet to implement a simple but effective application for recycling glass utilizing pulverized glass aggregate (PGA) in road construction projects.
 - Expansion of recycling by state government offices in 2006.
 - A recent EPA grant awarded to Kentucky will fund four e-scrap recycling workshops to address reuse, recycling, and regulatory issues of electronics across the state beginning October 2005 and culminating in March 2006.
 - Meetings with recycling businesses, industries, counties, cities, non-profit and environmental groups to inform cabinet on strategies to improve recycling in Kentucky.
 - Recycling initiative with state parks underway.
- *The Division of Waste Management's state government office paper recycling program thrives* – Currently serving 111 building locations in Frankfort and collecting office paper, computer paper, newsprint and cardboard. The shredding of confidential documents provides a zero cost alternative to state and local governments with increasing volume each year. Over 3,173,550 pounds were recycled, an increase of 15% over 2003.
 - The program is self-sustaining and revenue generated from the program allowed the purchase of three new trucks to replace its aging fleet of trucks. The trucks were purchased with program funds from the sale of recycled paper and cardboard and have messages on both sides to encourage the *4 R's* – *REDUCE, REUSE, RECYCLE, and REWARDS!* The trucks were delivered and placed in service in the fall of 2004.
 - Governor Fletcher and Cabinet Secretary LaJuana S. Wilcher performed an official unveiling of one of the new trucks featuring a version of the new state brand during the kick off of the cabinet's 2005 Earth Week activities.

CONCLUSIONS

Kentucky households recycle approximately 22% of their household solid waste, compared to the national average of 26.7%. Since 1998, there has been an overall decline in recycling nationwide and Kentucky's trends through the 90's and into the present mirror the national recycling trends. Recycling rates declined from 1998 through 2002 and increased in 2003 and 2004.

A major component in recycling trends is the commodity markets. As with most commodity market trends, there was a decline during the same time frame, and as markets have picked up, recycling is becoming more profitable. Kentucky lacks adequate infrastructure to capitalize on these improved trends. By reallocating existing funds to make recycling infrastructure goals attainable and working with our manufacturers of recycled content products, Kentuckians can recycle and divert these valuable materials away from the landfills to manufacturers for feedstock.

Kentucky's lower than average recycling rate reflects a lack of state level funding for local governments' recycling infrastructure. Additionally, the 25% waste reduction goal expired and waste disposed has increased each year with an overall increase since 1993 of 44 %. Most of the surrounding states provide state grants for recycling efforts on a county level. Cabinet staff continues to encourage regionalization efforts for recycling efforts and market development; however, without a dedicated funding source, the options for counties and state development are limited.

RECOMMENDATIONS

Recycling in Kentucky is at a crossroads. A long-term commitment is necessary to successfully develop a strong recycling infrastructure. Past efforts have failed due to lack of sustained support. Priority for sustainable recycling goals must remain consistent. The cabinet's role in Kentucky's recycling future is clearly that of leadership. Kentucky state government is leading the way by improving its recycling.

To bring the state on par and beyond the national average, Kentucky must provide state level funding for recycling to local governments. The advancement of the state as a whole in recycling efforts will require a dedicated funding mechanism and the provision of guidance to shape a strong recycling infrastructure in the Commonwealth. State government needs to be the role model for the counties regarding recycling.

The success of the crumb rubber grants and the overall success of the Waste Tire Trust Fund program need to be extended to further explore Kentucky-based marketing and products that can effectively promote future market research. Kentucky cannot afford, environmentally and economically, to fall further behind surrounding states. It is essential that all communities develop effective recycling programs.

While the Commonwealth has made significant progress in addressing illegal open dumps, tire cleanups and litter abatement, additional focus and financial support are required to improve local recycling programs.

A dedicated funding source enabled Kentucky to become a national leader in tire recycling. Equally important is the necessity of dedicated funding to support the development of local and regional recycling infrastructure. Kentucky can be a leader in this endeavor as well.



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Municipal Solid Waste Reduction

In recent years, the tonnage of recovered materials - usable recycled materials removed from the total amount of municipal solid waste - showed a net decline since 1998, when the state reached a record amount of 1,150,620 tons of recovered materials.

There were 1,237,294 tons recovered in 2004, a 317,492 ton increase over 2003. While this is encouraging, the increase is primarily due to a new statutory reporting requirement that took effect in 2003. Before then, the average yearly tonnage of recyclables was 685,484, which is a recycling rate of 11-13% (far below the national average of 26.7% and the Southeast Region average of 19%).

Since 1993, Municipal Solid Waste (MSW) disposal in Kentucky has increased 44 %. The leading causes for the increase in waste disposed are:

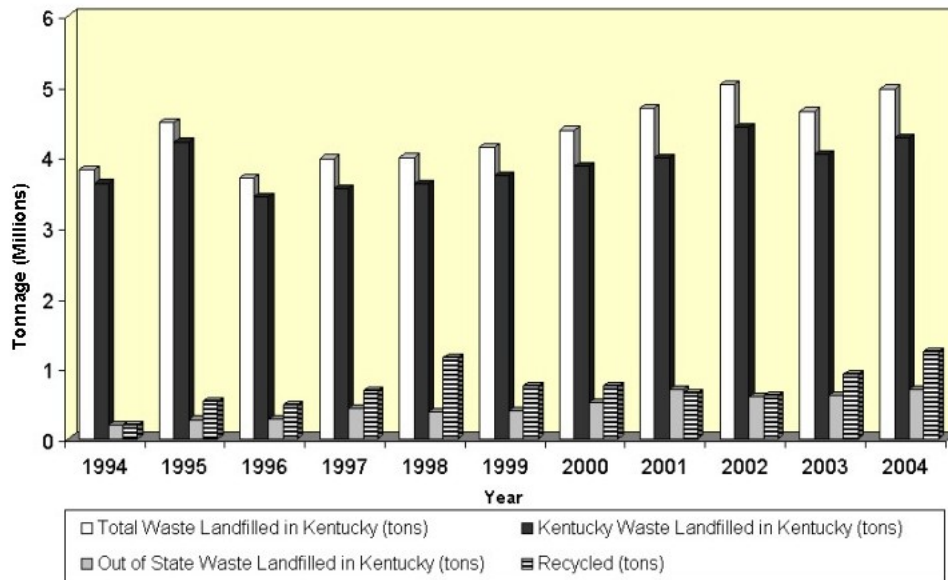
- inexpensive disposal fees in Kentucky
- a five-fold increase in out-of-state trash,
- the lack of recycling education,
- fragmented community recycling programs,
- population increase of 8.7% since 1993,
- more waste being legally disposed through improved garbage collection, and
- less illegal open dumping.

While House Bill 174 did not continue the 25% reduction goal initiated in Senate Bill 2, it did establish policies to limit and reduce the amount of solid waste disposed through the reduction in the amount of waste generated. The bill also encourages recycling, yard waste composting, and resource recovery. Funding to support these initiatives was not included in the 2002 legislation.

Additionally, the cabinet's Department of Environmental Protection (DEP) Management Plan for 2002 - 2003 established an internal goal of a 20% reduction in waste disposed and a 50% increase in the amount of solid waste recycled by 2010. DEP will monitor the progress of waste reduction from the base year of 1993 and the amount of solid waste recycled using 2001 as the base year.

The average cost in 2004 for waste disposed at Kentucky landfills was \$28.67 per ton, still considerably less than the average of surrounding states at \$34.00 a ton. The first chart on page 5 graphically illustrates the comparison of tonnages of in-state, out-of state and the combined total of municipal solid waste received at landfills and the amount in tons of recycled materials in Kentucky, beginning with the base year 1993. The second chart displays the expanded numbers referred to in the first chart.

Municipal Solid Waste Disposed/Recycled in Kentucky



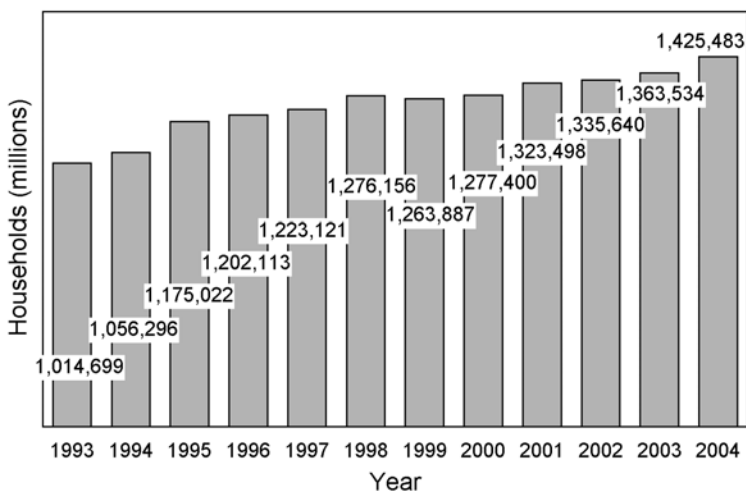
Year	Total Waste Landfilled in Kentucky (tons) □	Kentucky Waste Landfilled in Kentucky (tons) ■	Out of State Waste Landfilled in Kentucky (tons) ▨	Recycled (tons) ▩	Percentages Nationally	Percentages Kentucky
1994	3,813,365	3,621,623	191,742	191,684	23%	5%
1995	4,476,904	4,207,071	269,833	529,423	27%	11%
1996	3,700,832	3,429,983	270,849	474,415	28%	12%
1997	3,972,746	3,543,196	429,550	685,650	30%	16%
1998	3,989,181	3,615,890	373,291	1,150,620	31.5%	24%
1999	4,130,796	3,734,798	395,998	739,136	33%	16%
2000	4,375,652	3,860,516	515,136	742,398	32%	16%
2001	4,683,702	3,982,260	701,442	644,925	*	13%
2002	5,014,407	4,415,859	598,548	615,476	26.7%	12%
2003	4,642,560	4,036,800	605,760	919,802	*	18% **
2004	4,961,476	4,259,181	702,295	1,237,294	*	22% **

NOTE: 2003 landfill waste disposal data may not be accurate due to a changeover of computer systems.

*National data is not available for 2001, 2003, and 2004 percentages.

** 2003 & 2004 Kentucky percentage increases are partially attributable to better data, due to a new state law that took effect mid-2002 requiring recyclers to register and report amounts and types of materials recycled. Kentucky municipal solid waste recycled figures are for: aluminum, cardboard, steel, plastic, newsprint, glass, and paper.

Number Households Participating in Door-to-Door Collection of Solid Waste



Factors Affecting Increase in Municipal Solid Waste Collection:

Municipal Solid Waste Collection Programs

All counties met the July 1, 1994 statutory deadline for establishing universal collection programs. These programs make collection available to households in the form of curbside collection or self-haul to a convenience center, transfer station, or contained

landfill, but KRS 224.43-315 does not require citizens to participate. Thirty-six counties have passed mandatory collection ordinances. Some counties with mandatory collection have low participation rates due to a lack of enforcement. The primary system for 103 counties is curbside collection.

The chart on page 5 compares the total number of households participating in some form of a collection system for the calendar years listed.

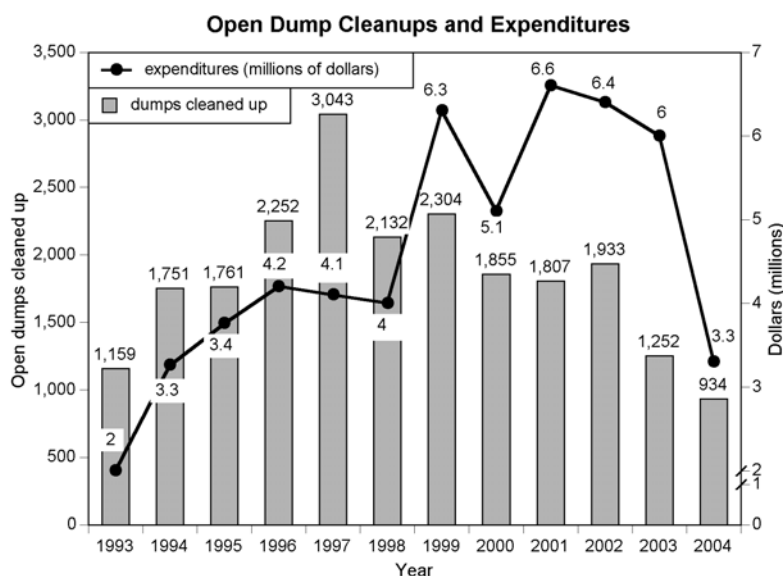
In 2004, 82.4% of households participated in a curbside collection system. The statewide collection rate of 88.67% includes curbside collection and other collection systems. Households paid an average garbage bill of \$12.12/month. Additionally, 311,775 more households participated in curbside collection in 2004 than in 1993, representing a 23.06% increase. These numbers do not reflect a number of citizens who legally take their garbage to convenience centers and transfer stations for ultimate disposal in landfills.

The primary obstacle in assessing household participation rates is inadequate tracking and reporting. A participation rate of 88.67% means an estimated 161,507 households (11.33%) are disposing of their garbage illegally or are not accounted for by current tracking methods. This number dropped from 14.88% in 2003 to 11.33% in 2004. Most counties have difficulty tracking customers who self-haul to legal disposal sites.

Beginning October 1, 2003, waste haulers and recyclers were required to register and beginning March 1, 2004, report to the counties annually. The registration requirement for waste haulers and recyclers should minimize the tracking and reporting problems previously demonstrated in county reporting. The cabinet estimates that approximately 5% of Kentuckians either illegally dump or burn their garbage.

Cleanup of Illegal Open Dumps

Enforcement is essential to prevent recurrence of illegal open dumping, but most counties don't have adequate solid waste staff. One hundred and twelve (112) counties have solid waste coordinators; 54 are



part-time and most have more than one job. House Bill 174 will aid counties in cleaning illegal open dumps with funding provided by the \$1.75 remediation fee. Requirements to receive reimbursement funding for illegal open dump cleanup include the employment of a solid waste coordinator with enforcement powers. The cabinet anticipates the elimination of illegal open dumping with increased local and state enforcement.

Since 2001, the Kentucky Certified Clean County Program (KCCCP) was instrumental in cleaning 1,020 illegal open dumps at a cost of \$1,929,847.12. Four counties remain

in the program with a total of 106 illegal open dumps to be cleaned at an estimated cost of \$329,629.79. The number of dumps cleaned through KCCCP is included in each year's total dumps cleaned.

Kentucky has placed great emphasis on cleaning over 22,000 illegal open dumpsites, with over \$55 million spent on cleanups since 1993. The chart above shows the number of illegal open dumps **cleaned** by the counties and the cost in millions (M) for the calendar years listed.

The first chart on page 7 indicates the illegal open dumps **identified** by counties for the calendar years shown. The number of dumpsites reported by counties shows a significant decline, approximately 68% since 1994. This decrease is a measure of fewer dumps being created. Contributing to the decline was the

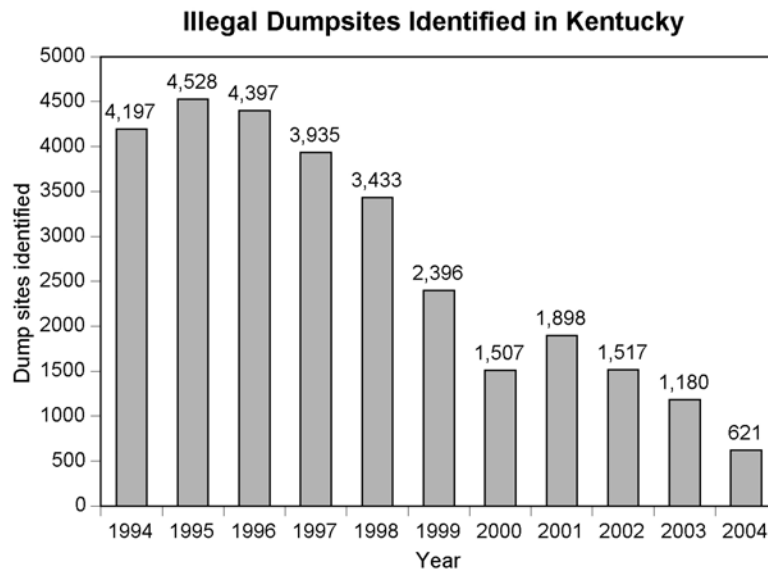
massive public awareness campaign instituted by the cabinet in the mid-90's to not only clean dumps, but to stop illegal open dumping through enforcement and prosecution of dumpers.

Another factor is the success of the Kentucky Certified Clean County Program. The awarding of a “Certified Clean County” status after the identified illegal open dumps are cleaned requires the participants to ensure their county is dump free. The reimbursement program initiated with HB 174 should significantly reduce the number of illegal open dumps identified statewide.

Litter cleanups

The division began tracking the cost of litter activities and the number of bags of litter collected in 2001. The 2001 Annual Report Summary shows \$4,219,940 in county funds expended on litter. The influx of funding through the Kentucky Pride Fund, the Eastern Kentucky PRIDE and Bluegrass PRIDE funds have combined to significantly increase the

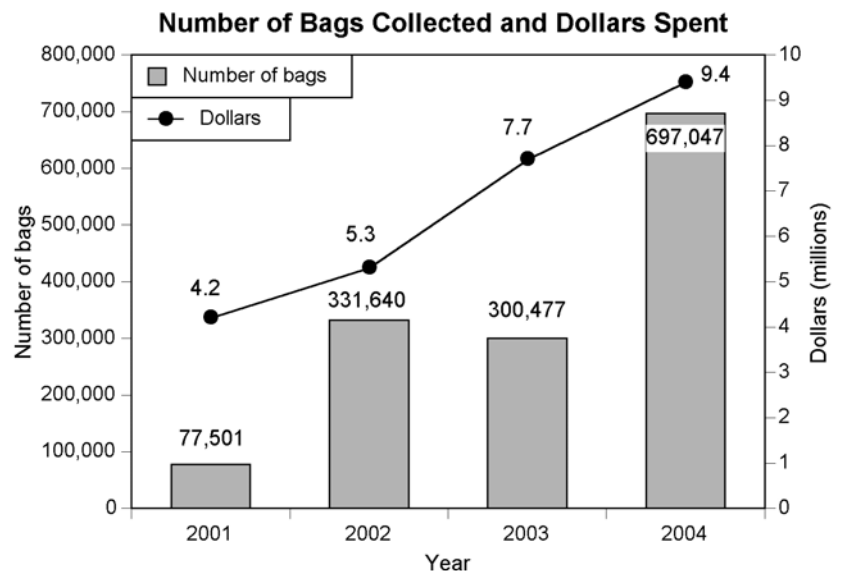
amount of county funds expended to control and cleanup litter along public roads. The following chart reflects the number of bags of litter collected and the amounts spent on litter for the calendar years 2001 - 2004.



State litter grant funds (Kentucky Pride Fund) began in fiscal year 02 – 03 and the counties included the new funding for their expenditures on a calendar year basis, beginning with 2003.

The Great American Cleanup

The Great American Cleanup, sponsored by Keep America Beautiful, runs March through May annually. The three-month period includes the cleanups sponsored by Commonwealth Cleanup Week (proclaimed the last week of March by the 1998 legislature), Eastern KY PRIDE and Bluegrass PRIDE.



The dominant theme of Commonwealth Cleanup is to “Spring Clean” Kentucky with the combined efforts of city and county government, individuals, businesses, non-profit groups and various state agencies. In addition, since the 1998 House Joint Resolution establishing Commonwealth Cleanup Week as the last week in March, more than 127,371 volunteers have pitched in to cleanup Kentucky’s roadways and hillsides.

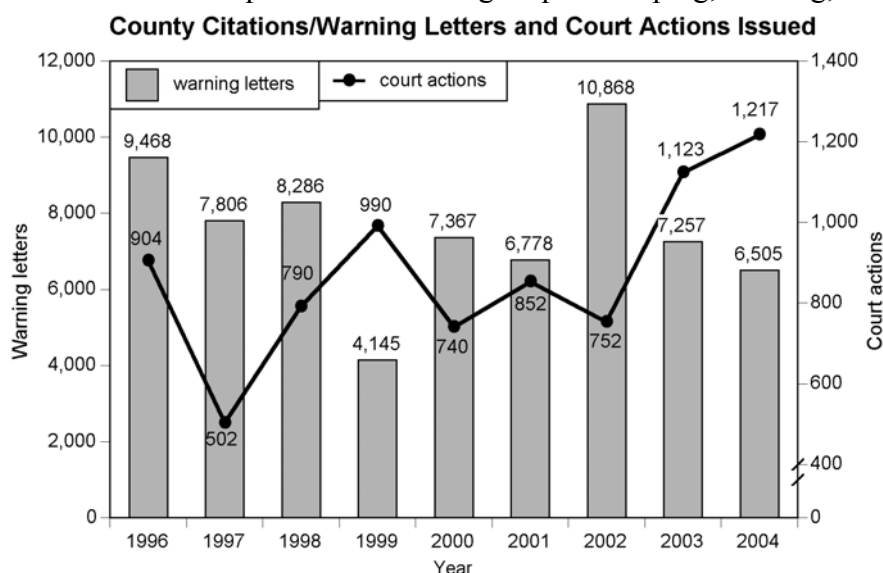
Eastern Kentucky PRIDE and Bluegrass PRIDE designate a week in April for cleanups. The Waste Tire Trust Fund allocates funds to assist in tire recycling for tires found as a result of an illegal open dump cleanup. The Great American Cleanup results (March – May) are listed below in the first chart on page 8 for the calendar years listed:

Year	Participating Counties	People	Dumps Cleaned	Miles Cleaned	Tons Recycled	Bags of Trash	Number of Appliances	Tons of Trash Disposed	Tires Recycled/ Disposed
2000	104	16,633	210	322	1,876	45,943	-----	5,755	58,067
2001	62	13,297	166	626	628	49,724	7,385	5,503	43,559
2002	44	6,294	119	510	357	29,095	3,604	2,884	43,294
2003	91	23,218	171	1,289	713	59,885	6,030	6,606	85,535
2004	89	10,517	366	3,514	1,525	46,725	3,338	5,074	183,780

Enforcement

State inspectors stepped up their efforts against illegal open dumping in 1997. Since February 1997, state inspectors have issued 4,632 Notices of Violation (NOVs) to illegal open dumpers. Footage from the cabinet's surveillance cameras accounted for 2% of the Notices of Violation issued. The total cases sent to each division's enforcement branches total 1,317. Additionally, county solid waste coordinators statewide have increased the prosecution of illegal open dumping, littering, non-payment of garbage bills and non-

participation in a county's mandatory collection system.



The chart on the left shows counties issued the following **citations and warning letters** and subsequent **court actions** for the calendar years 1996 – 2004.

Education

Virtually all counties provide some level of solid waste education to adults and children alike. Counties conduct local activities through schools, radio, newspapers, television, brochures,

fairs, contests, etc. Civic groups, extension service, homemakers clubs, school groups, DEP inspectors and local non-profit organizations all provide support through local involvement in solid waste education activities.

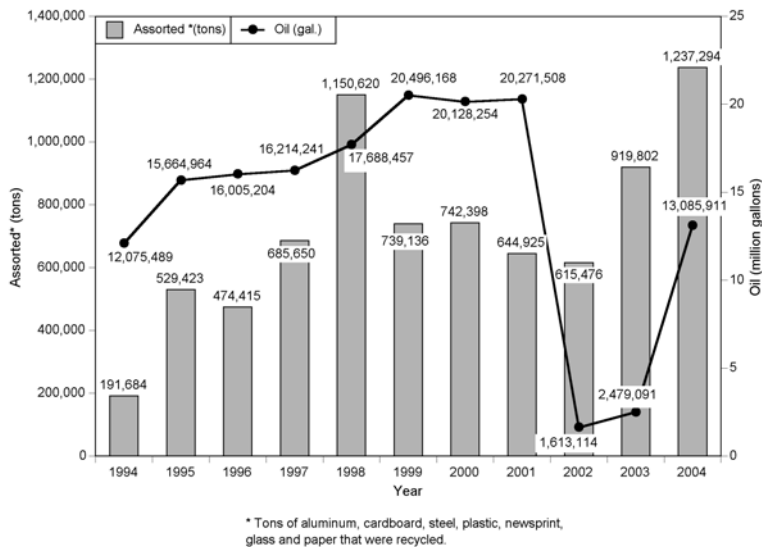
The cabinet hosts solid waste training and education workshops twice a year for county solid waste coordinators, judges-executive, magistrates, area development staff, environmentalists, elected officials and other interested citizens. State staff also provides assistance and ensures compliance through annual site visits to all counties, monthly newsletters, daily phone calls and e-mail correspondence.

Factors Affecting Decrease in Municipal Solid Waste Disposed:

County Recycling and Recycling Education Programs

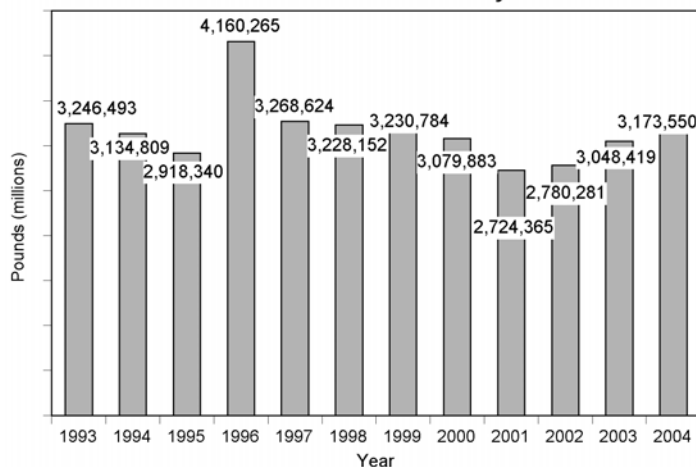
The first chart on page 9 outlines the amount of common household materials recycled for calendar years 1994 – 2004. County recycling data illustrates that statewide recycling rates of common household items such as glass, aluminum cans, newspaper, mixed and white office paper, cardboard, metal and plastics continue to play an integral part in their solid waste programs. Recycling rates rose to a high in 1998 but decreased markedly through 2002. Contributing to this decline was the loss of state funding for infrastructure and local funding assistance. Costs for recycling increased while profitability decreased during that period.

Common Household Materials Recycled in Kentucky



paper, newsprint, and corrugated paper. For calendar year 2004, government offices recycled 3,173,550 pounds of paper, newsprint and cardboard, an increase of 15% over 2003. The chart below reflects the millions of pounds recycled for the calendar years 1993 – 2004.

Paper, Newsprint and Corrugated Materials Recycled by State Offices in Kentucky



Beginning March 1, 2004, House Bill 174 required recyclers to report annually to the county the amount of municipal solid waste collected for recycling by volume, weight, or number of items and the type of items recycled. The cabinet anticipates more accurate reporting on recycling figures in the future.

State Recycling Programs

The Division of Waste Management's Paper Recycling Program continues to serve state government offices. Office paper represents 80% of the waste stream in the office environment. Currently, we serve 111 building locations in Frankfort and collect white and colored ledger paper, mixed paper, computer

The Kentucky Recycling and Marketing Assistance Program (KRMA)

recycling staff continues to encourage regionalization of recycling infrastructure through meetings, presentations and site visits across the Commonwealth. The recycling staff developed guidelines for school and office paper recycling programs and has begun studies on banning electronic waste (E-scrap) from MSW landfills.

Recycling staff, along with Bluegrass PRIDE, established a household hazardous waste (HHW) collection program throughout the Bluegrass PRIDE area that is currently used as a model statewide.

The staff continues to encourage the use of pulverized glass aggregate (PGA) in road and other construction projects. Staff also attend workshops and make presentations to several public and private groups. Additionally, they promote the “Buy Recycled” initiative for public and private entities. In 2004, KRMA recycling staff visited 14 counties, five universities, and one Kentucky Transportation District Office to answer equipment, marketing and other questions and make recommendations for improved recycling efforts.

Waste Tire Trust Fund Sunsets July 31, 2006

Keep America Beautiful recognized the Commonwealth in 2004 as the No. 1 state for used tire cleanup and recycling during the Great American Cleanup, contributing 864,000 of the 1.2 million tires recycled nationwide for the period March through May. Kentucky recovered an additional 536,000 passenger tire equivalent (PTE) for the periods January through February and June through December of 2004 accounting for the 1.4 million PTE recovered statewide for the 2004 calendar year.

Crumb Rubber Grants

In FY 03-04 the Cabinet set aside \$1 million from the Waste Tire Trust Fund for grants to be awarded to local government and schools for the use of crumb rubber made from recycled tires on athletic fields and playgrounds. Twenty-one grants totaling \$979,000 were awarded for projects to be completed during calendar year 2004. Money for the Waste Tire Trust Funds comes from a \$1.00 fee charged on the sale of all new replacement motor vehicles tires sold in Kentucky. This fee is currently due to sunset on July 31, 2006.

The spring of 2003 started the second round of the Waste Tire Amnesty Program. The 2004 program continued with the 48 counties of the Bluegrass, Purchase, Barren River, Big Sandy and Kentucky River Area Development Districts (ADD). Lexington-Fayette-Urban-County-Government (LFUCG) conducted its own amnesty program through a Memorandum of Agreement. Nearly 1.4 million PTE were recovered and recycled in 2004 through this effort at a cost of \$1,515,412.82 or \$1.08 per PTE.

Calendar year 2005 will mark the end of round two of the amnesty program with the remaining 31 counties of the Lake Cumberland and Lincoln Trail ADDs in the spring and Pennyriple Area Development District in the fall.

Plans for the future of the waste tire amnesty program remain uncertain as the current funding for the program is due to sunset on July 31, 2006. The Cabinet will propose legislation during the 2006 General Assembly to reauthorize the \$1.00 tire fee to further initiate additional recycling efforts statewide.